

NATHAN

Serial No. 09/161,584

Amendment dated March 31, 2004

Response to Office Action dated December 1, 2003

**Amendments to the Claims:**

This listing of claims will replace all prior versions and listings of claims in the application. By the present amendment, claim 10 has been amended for clarity.

**Listing of Claims:**

Claims 1-9. (*Canceled*)

Claim 10. (*Currently Amended*) A digital transmission system for audio speakers which uses AC power lines as an audio network, comprising:

a digital compression device for compressing digital audio data into a compressed digital data;

a digital transmission device including a series conversion circuit for converting the compressed digital data into series compressed digital signal packets;

a digital modulator which controls a transmitter for transmitting the series compressed digital signal packets onto the AC power lines using one carrier frequency;  
and

a digital receiver device connected to the AC power lines for receiving the transmitted packets over the AC power lines, wherein the digital receiving device includes:

- a digital demodulator for demodulating the series compressed digital signal packets modulated on one carrier frequency;
- a serial/parallel digital converter for converting the demodulated series compressed digital signals into demodulated parallel compressed digital signals;

- a digital decompressor for decompressing the demodulated parallel compressed signals into demodulated parallel decompressed digital signals;
- a digital/analog converter for converting the demodulated parallel decompressed digital signals into analog signals; and
- a loudspeaker for receiving the analog signals and generating sound corresponding thereto.

Claim 11. (*Previously Presented*) The digital transmission system of claim 1, wherein the digital modulator is a phase quadrature digital modulator.

Claim 12. (*Previously Presented*) The digital transmission system of claim 11, wherein the series conversion circuit is operable to encode a destination address into the series compressed digital signal packets, and further wherein the digital receiving device is operable to compare the destination address to an address of the receiving device in order to determine if the signal is addressed to the receiving device.

Claim 13. (*Previously Presented*) The digital transmission system of claim 12, wherein the series conversion circuit is operable to multiplex several digital files representing a different audio signal intended for reception by various receiving devices having different addresses associated therewith.

**NATHAN**

Serial No. **09/161,584**

Amendment dated March 31, 2004

Response to Office Action dated December 1, 2003

Claim 14. (*Previously Presented*) The digital transmission system of claim 10, wherein the transmitter comprises an encryption device which encrypts the digital signal, and the receiving device includes a decryption circuit which uses a decryption key to decrypt the encrypted digital signal.

Claim 15. (*Previously Presented*) The digital transmission system of claim 13, wherein the digital signal is serialized according to a protocol including a part for starting protocol data, a part for an address of an intended recipient, a part for digital signal or multiplexed digital signal, and a part for ending protocol data.

Claim 16. (*Previously Presented*) The digital transmission system of claim 15, wherein the protocol further includes part for control data for the loudspeaker.

Claim 17. (*Previously Presented*) The digital transmission system of claim 16, wherein the protocol further includes a part for an encryption key for use in decrypting the digital data.

Claim 18. (*New*) The digital transmission system of claim 15, wherein the protocol further includes a part for an encryption key for use in decrypting the digital data.